

NOTES AND A KEY TO SEPARATE NORMAL AND HETEROMORPHIC MALES OF *PYEMOTES GIGANTICUS* CROSS, MOSER, AND RACK AND *P. DIMORPHUS* CROSS AND MOSER (ACARI: PYEMOTIDAE)

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ABSTRACT—Photomicrographs of normal and heteromorphous males of *Pyemotes giganteus* Cross, Moser, and Rack (1981) and *P. dimorphus* Cross and Moser (1975) illustrate differences and similarities between the species. The key to species by Cross et al. (1981) is emended to accommodate the separation of males of these two species.

INTRODUCTION

According to Cross et al. (1981) males of *Pyemotes giganteus* Cross, Moser, and Rack and *P. dimorphus* Cross and Moser are indistinguishable morphologically. In both species the phoretomorphic females and "normal" females cannot be separated. There are two distinct heteromorphous female forms of *P. giganteus* (Figs. (2-3), whereas there is only one heteromorphous female form of *P. dimorphus* (Fig. 5). The only known host of *P. dimorphus* is the cedar bark beetle *Phloeosinus canadensis* Swaine (Scolytidae), and *P. dimorphus* is not known to occur west of Louisiana. In contrast, *P. giganteus* is known from 15 bark beetle species of diverse genera taken from 10 species of conifers in California, Oregon, and Washington (Moser 1981) and it is thus not known to occur east of Utah. *Pyemotes giganteus* has been collected from the tenebrionid *Corticeus subopacus* (Wallis). Moser (1981) mentioned the existence of the normal female of *P. giganteus* but did not illustrate the species. This physogastric female mentioned by Moser (1981) is shown here (see Fig. 1). There are no significant morphological differences for separating the "normal" and heteromorphous females of *P. giganteus* and *P. dimorphus*. Seta pe₂ appears to be shorter and more slender on both female forms of *P. dimorphus* than it is on *P. giganteus*.

Cross et al. (1981) stated in their key to the species of *Pyemotes* that the two male forms of *P. dimorphus* and *P. giganteus* are not separable except for the presence of intermediates between "normal" and "heteromorph" males which are presently known only from *giganticus*. We have examined types and approximately 75 specimens of each species, including

13 dimorphic sexual forms. Couplet 2 of the key by Cross et al. (1981) is emended to accommodate the separation of the "normal" and "heteromorphous" males of *giganticus* and *dimorphus* to read as follows:

2. With all 4 pairs of prodorsal setae nearly in a transverse line; polymorphic species.

A. Normal males

Prodorsal seta 1 about 1/3 length of seta 2 (Fig. 7A) *dimorphus* Cross & Moser

Prodorsal seta 1 more than 1/2 length of seta 2 (Fig. 8A) . . . *giganticus* Cross, Moser, & Rack

B. Heteromorphous males

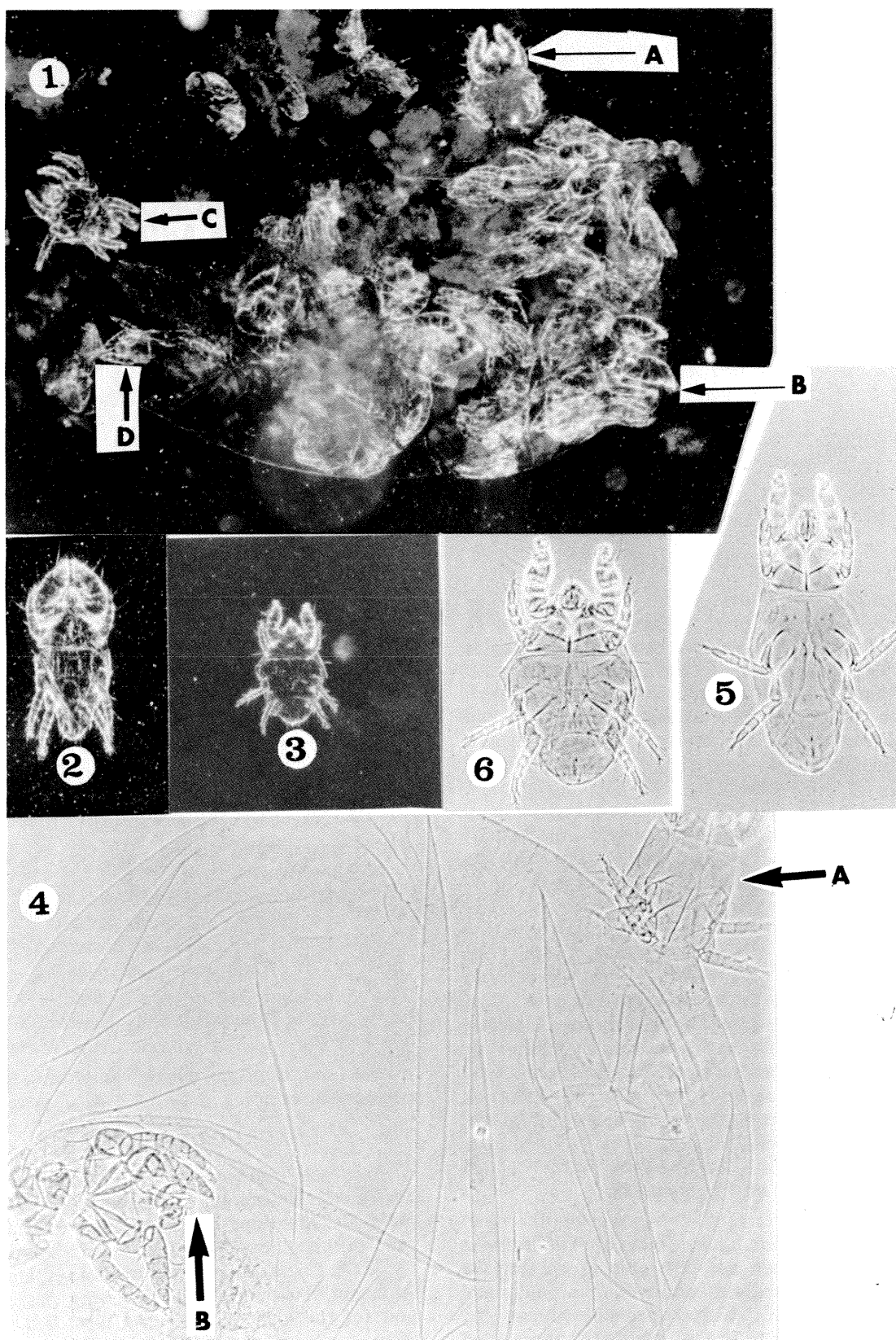
Lateral seta (L) on dorsal hysterosoma thick and long (133 μ), seta 3 about 1/3 length of seta 4 (Fig. 7B); body length 279 μ , width 213 μ *dimorphus* Cross & Moser

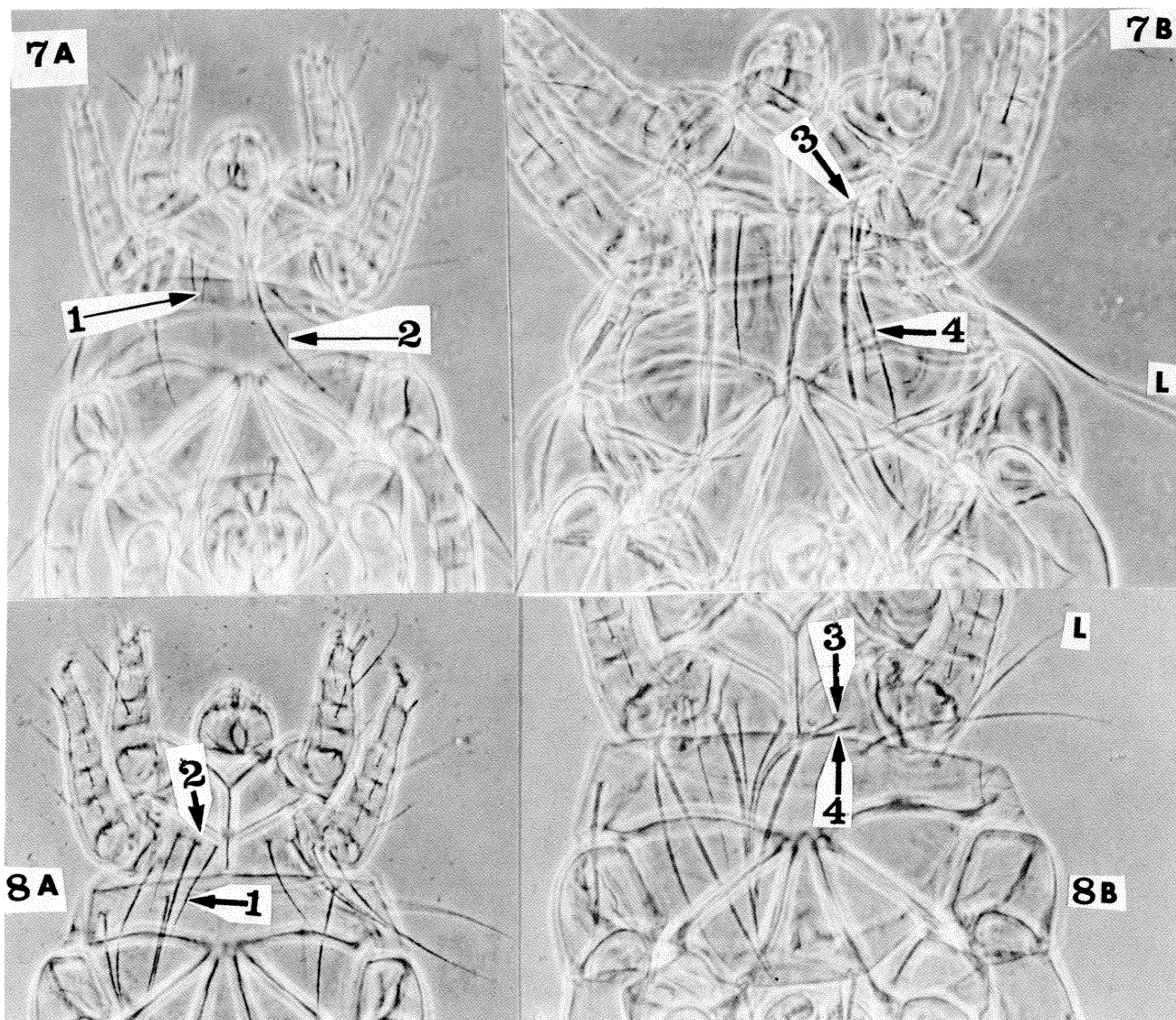
Lateral seta (L) on dorsal hysterosoma slender and short (66 μ); seta 3 about 1/2 length of seta 4 (Fig. 8B); body length 226 μ , width 199 μ *giganticus* Cross, Moser, & Rack

At least 1 pair of prodorsals well anterior to the others; polymorphic or not. 3

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Pyemotes giganticus Cross, Moser, and Rack. Fig. 1, normal adult physogastric female mother with unborn forms (arrow A), (arrow B) unborn heteromorphous female (arrow C) unborn male; (arrow D) unborn normal female.

Figs. 2-3, heteromorphous female forms.

Fig. 4, (arrow A) normal adult physogastric female mother with unborn heteromorphous male arrow B.

Pyemotes dimorphus Cross and Moser. Fig. 5, normal female; Fig. 6, heteromorphous female. Fig. 7A, normal male; 7B, heteromorphous male.

Pyemotes giganticus Cross, Moser, and Rack. Fig. 8A, normal male; 8B, heteromorphous male.

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